



Sheet 1 of 1

Form PTO-1449 (REV. 8-83) US Dept. of Commerce PATENT & TRADEMARK OFFICE			ATTY DOCKET NO. 122381		APPLICATION NO. New U.S. National Stage of PCT/JP03/08833	
INFORMATION DISCLOSURE STATEMENT (Use several sheets if necessary)			APPLICANTS Keiji OTAKI et al.			
			FILING DATE January 10, 2005		GROUP	
U.S. PATENT DOCUMENTS						
EXAMINER INITIAL		DOCUMENT NUMBER	DATE	NAME	CLASS	SUB CLASS
FOREIGN PATENT DOCUMENTS						
		DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUB CLASS
	1	JP A 06-341592 w/ abstr & transl	12/13/1994	JAPAN		
	2	JP A 58-112724	7/5/1983	JAPAN		
	3	JP A 58-144158	8/27/1983	JAPAN		
	4	JP A 62-110697	7/14/1987	JAPAN		
	5	JP U 3038186 (w/ transl)	3/19/1997	JAPAN		
OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, etc.)						
EXAMINER					DATE CONSIDERED	
Examiner: Initial if citation considered, whether or not citation is in conformance with M.P.E.P. 609; draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.						

INTERNATIONAL SEARCH REPORT

International application No.

PCT/JP03/08833

A. CLASSIFICATION OF SUBJECT MATTER

Int.Cl' F16L59/04, D04H1/42, D04H1/74, E04B1/80

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

Int.Cl' F16L59/00-59/22, D04H1/00-18/00, E04B1/80

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Jitsuyo Shinan Koho	1922-1996	Toroku Jitsuyo Shinan Koho	1994-2003
Kokai Jitsuyo Shinan Koho	1971-2003	Jitsuyo Shinan Toroku Koho	1996-2003

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y A	JP 6-341592 A (Hitachi Zosen Corp.), 13 December, 1994 (13.12.94), Full text; all drawings (Family: none)	1, 4-8 2, 3
Y	JP 58-112724 A (Shin Nippon Seitetsu Kagaku Kogyo Kabushiki Kaisha), 05 July, 1983 (05.07.83), Full text; all drawings (Family: none)	1, 4-8
Y	JP 58-144158 A (Nihon Mukizairyo Kabushiki Kaisha), 27 August, 1983 (27.08.83), Full text; all drawings (Family: none)	1, 4-8

Further documents are listed in the continuation of Box C.



See patent family annex.

“A”	Special categories of cited documents: document defining the general state of the art which is not considered to be of particular relevance	“T”	later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
“E”	earlier document but published on or after the international filing date	“X”	document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
“L”	document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)	“Y”	document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art
“O”	document referring to an oral disclosure, use, exhibition or other means	“&”	document member of the same patent family
“P”	document published prior to the international filing date but later than the priority date claimed		

Date of the actual completion of the international search
04 November, 2003 (04.11.03)

Date of mailing of the international search report
18 November, 2003 (18.11.03)

Name and mailing address of the ISA/
Japanese Patent Office

Authorized officer

Facsimile No.

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INTERNATIONAL SEARCH REPORT

International application No.

PCT/JP03/08833

C (Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	Microfilm of the specification and drawings annexed to the request of Japanese Utility Model Application No. 202275/1985 (Laid-open No. 110697/1987) (Nippon Sheet Glass Co., Ltd.), 14 July, 1987 (14.07.87), Full text; all drawings (Family: none)	5
Y	JP 3038186 U (Paramaunto Garasu Kogyo Kabushiki Kaisha), 19 March, 1997 (19.03.97), Full text; Fig. 4	7
A	JP 6-341592 A (Hitachi Zosen Corp.), 13 December, 1994 (13.12.94), Full text; all drawings (Family: none)	1-8